

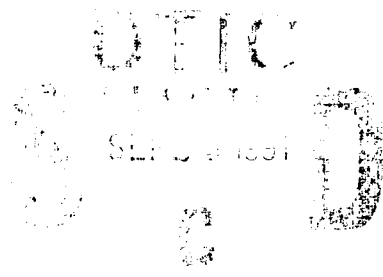
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PARTNERING



A Special Research Problem

Presented to

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Georgia Institute of Technology

by

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PARTNERING

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## CHAPTER I

### INTRODUCTION AND DEFINITIONS

"Partnering", or "Strategic Partnering", is a management technique whereby a long term relationship is developed with a supplier, owner, contractor, etc. in order to derive mutual benefits developed through mutual trust and commitment. Partnering techniques have been used in many industries and are being increasingly used in the construction industry. Partnering techniques are defined differently in different industries, but all examples show several common traits such as mutual risk, trust, and reward. The scope of this report is to examine the technique of partnering in several industries and contrast these uses with current use in the construction industry. In particular, a specific type of Construction partnering used by the Department of Defense will be examined.

## PARTNERING DEFINED

In recent years, the process of partnering has become popular in industry. The construction industry is slowly learning that partnering can be a useful tool for profitability. Partnering is a long term contractual process whereby both parties work to maximize the others interests. The theory is that if the parties work toward each others interest in a long term relationship, greater growth, profitability, and profit will occur for all parties.

"Partner" is defined as "one who takes part in an activity with another or others; specifically, one or two or more persons in the same business enterprise, sharing its profits and risks." [Webster, 1969] In the business world, a partner generally has a fiduciary responsibility to look out for the other partner's interests. While the technique of "partnering" does not necessarily extend to a fiduciary responsibility, the process is characterized by trust and mutual risk and benefit.

The management technique called "Partnering" is defined differently by each industry in which it is used. However, the general traits are similar and a broad and common definition follows. The Construction Industry Institute, a

trade association which promotes cost effectiveness in the construction industry, defines the process as follows in a report by its Partnering Research Group:

"Partnering is a long-term commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant's resources. The relationship is based upon trust, dedication to common goals, and an understanding of each other's individual expectations and values. Expected benefits include improved efficiency and cost effectiveness, increased opportunity for innovation, and the continuous improvement of quality products and services.

Departing from the clinical definition, "partnering" is simply a relationship wherein:

- All seek win-win solutions.
- Value is placed on long-term relationships.
- Trust and openness are norms. An environment for long-term profitability exists.
- All are encouraged to openly address any problem.
- All understand that neither benefits from exploitation of the other.
- Innovation is encouraged.
- Each partner is aware of the other's needs, concerns, and objectives, and is interested in helping their partner achieve such.
- Overall performance is improved. ["Partnering, Meeting the Challenges...", 1989]

Several themes are consistently raised in any discussion of partnering. The Construction Industry Institute lists these themes as:

1. Long term relationship

The relationship is not for the completion of one project but rather over a long period of time and includes

a continuing requirement of projects.

2. Commitment

Each party must be committed to the success or the other.

3. Continuous Improvement

Feedback must flow freely and the partners must remained focussed on improving the quality of the product.

4. Trust

Shared information must be treated confidentially.

5. Investment

Each party invests those strengths or assets with which it can contribute to the success of the partnership.

6. Alignment

All parties must be in agreement with the goals and expectations of the partnership.

7. Synergism

The relationship should "combine" the resources and knowledge of all parties.

8. Risks

The risk is shared among all parties.

9. Rewards



Rewards should be determined in conjunction with risks. All parties must gain some advantage from the relationship.

10. Equity

All parties share in the success. All must act as partners

11. Systemic

The relationship should not depend solely on individuals, but should be systemic to the corporate culture.

12 Competitive Edge

Each partner should gain from the relationship.

["Partnering, Meeting the Challenges...", 1989]

Larry Wilson, founder of Wilson Learning Corporation, has identified five basic values which are basic to a true partnering relationship:

1. TRUST --100 percent. Everyone understands and trusts everyone else. Everyone commits to a mutually beneficial relationship and to trusting the others.

2. ACCOUNTABILITY --100 percent. Everyone takes 100 percent personal responsibility for the partnership, for the success and the setbacks.

3. SUPPORT -- 100 percent. Everyone commits to giving and receiving support. His slogan is "100

percent support through all the mistakes until we make it."

4. TRUTH -- 100 percent. No holding back of information or opinion; a willingness to talk about anything. This is especially true for bad news- the delays, the price increases and the rumors.

5. EFFORT -- 100 percent. Everyone is 100 percent committed to the mission. You don't go into meetings with one eye on the door, or with the intent of making the meeting end at 3:00 so you can catch the only direct flight home.

[French, 1988]

Nick Prater, CEO of Mobay, a control industry firm, gives an example of why partnering is necessary in the control industry:

"Control technology and process design capability have been leapfrogging each other for the last 50 years in a ratchet effect, but control technology is clearly ahead today. . . . industry is not ready or capable to fully absorb and use its potential. Therefore, we must follow a team approach" -- his word for partnering -- "consisting of process chemists, design engineers, operation and maintenance engineers and suppliers to bring the system into balance." [French, 1988]

Another key element in the partnering process is that the partners cannot control every aspect of the partnering operation. They must give up some control in order to let the partners exercise their expertise and perform more efficiently. The following quote from a manufacturing plant superintendent, although applied to a partnering process with in-house employees, sheds some light on this issue:

"A real important part of the process is this:

you have to change the way you communicate. You have to be ready to communicate close to everything you know. If you want them (employees) to be committed and to demonstrate some partnership and ownership, management has to give up its right to control information. If you tell them where you're trying to take them, and let them get involved in the process, they'll give you ideas you never would have thought of yourself."  
[French, 1988]

Key words from a discussion of a partnering relationship between Shell Oil and Du Pont are synergistic, commitment, and trust.

Ford Motor Company, defines partnering as

"any process in which two (or more) companies cooperate to an unusually high degree to achieve their separate but complementary objectives. They do this in an way that goes well beyond the usual levels of mutual trust, vision, and commitment in the standard customer-supplier relationship, but not so far as to constitute a legal merger and in a way that will support obligations and objectives vis-a'-vis other customers and suppliers. The partners must not only trust each other but also have a common vision of future benefits and be willing to commit resources to joint programs."  
[Stralkowski and Billon, 1988]

"In effect, a partnering effort involves establishing a "third entity" to perform the work - one that operates autonomously." [Vervalin, 1989]

In summary, although the specific relationship of partnering may be quite different to suit the idiosyncrasies of each industry, a partnering relationship is characterized by the following:

- mutual trust

- long term commitment

- shared risk, reward, responsibility, and goals

The following chapters will present specific examples of partnering relationships. Even though each relationship is different, the same themes are common.

## GROWTH PARTNERING

Mack Hanan, President of The Wellspring Group, management consultants in business growth and diversification, has been credited as the inventor of growth partnering. Growth partnering is defined in this sense as a method of partnering to develop growth in industry. "A growth partner is a special kind of customer. It is a customer whose costs we can significantly reduce or whose profitable sales volume we can significantly increase. In one or the other of these two ways, we can improve a customer's profits. By improving his profits, we can help him grow." [Hanan, 1986] In his book, Growth Partnering, How to Manage Strategic Alliances for Mutual Profit, he sets out his theory for partnering. Among the points he makes are:

1. We can't grow our own business, only someone else's. The businesses we grow are called "key customers". By striving to help the key customer grow, greater growth for both is assured.
2. We grow by improving our partner's profits.
3. "If we cannot grow a customer, we cannot partner with him. We can do business with him but we cannot be partners. Instead, we will be merely

a vendor to him. . . Vendors and purchasers are in business to make money. Partners are in each other's business to make growth."

4. Strategic partnering is a win-win relationship.

5. Cost control is unyielding. Vendors become an extension of the firm's internal cost control.

The prerequisites for a partnering relationship include:

1. A Mutual strategy and objective. The goals of both parties as well as the methods of achieving those goals should be the same.
2. Mutual risk and reward. Both parties share the risks of failure as well as the rewards of success.

Hanan's method of growth by partnering exhibits the same traits as discussed in the previous chapter. He notes that a partnering approach requires a new attitude in dealing with customers and competitors.

"Once we accept the fact that we can only grow by growing our key customers, we revise forever the relationship we have with them.

At once, the traditional distinction between buyer and seller alters. Its basis, which lay in the absence of mutual objectives, will disappear. Win-lose strategies will have no place because a customer must win if we are going to be able to grow him. We must win if the customer is going to have a continuing improver of his profit. In this way, a win-win relationship will be fostered between us.

The line between merely selling and buying

will blur. The zone where our selfish interest conflicts with our customer's interest will thin down. The traditional need to overcome the customer will be converted to a need to come over to his way of assigning priorities to his problems, of defining the kinds of solutions he can most readily implement, and, together with him, putting them to work inside his business."  
[Hanan,1986]

## Chapter II

### Contractual Relationships

Business relationships between companies are formed in order to obtain a service or product not produced in house. This relationship may take on innumerable forms. It can be a one time only service or a long time relationship. When a business wants to obtain a service or product that it does not currently produce in-house, several options are available. The options span the range from a lump sum contract or purchase order for a one time delivery, to obtaining the service by creating a new production or service capability within the organization. Written contracts provide the vehicle for obtaining most of the services when the service is obtained from outside the firm. A myriad of contract types are available to suit the particular situation at hand. Many types of contractual arrangements have developed in the construction industry to allow the architect-engineer/owner/contractor to work together for mutual gain. Each of these types of contractual arrangements have varying degrees of risk for both parties. Several of the more common types of



arrangements are:

1. Fixed Price contract
2. Percentage of fee contract
3. Open end contract
4. Sole source

["Student Guide...",1982]

Figures 2.1 to 2.3 provide a comparison of several of the common types of contractual arrangements. Each of these contract types attempt to define the goals and allocate the risk and reward for successful or unsuccessful completion.

At one end of the risk spectrum is the lump-sum or fixed-price contract. This contract type is one of the most well known and widely used contract types. The fixed price contract places almost all the risk for completion explicitly on the contractor. He alone is responsible for successful completion and receives no reward for early completion.

At the other end of the contract risk spectrum is the cost plus fee contract type. In this type of contract, the contractor performs the required work on a cost reimbursable basis and an additional fee determined by various methods. This type of contract places most of the risk on the owner rather than the contractor since the cost of all work is reimbursable to the contractor.

Providing a service in-house is at one extreme of the

Figure 2.1

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## TYPES OF CONTRACTS - COMPARISON AND SUMMARY

| Fixed Price<br>(greatest risk on contractor)  |  |  |   | Open End  |   | Time<br>and Materials   | Cost Reimbursement<br>(greatest risk on government)   |   |
|---|--|--|---|---|---|---|---|---|
| Firm Fixed Price<br>(lump sum)  | Unit Price<br>(est. quantity)  | Fixed Price<br>Incentive*  | Fixed Price With<br>Quality Incentive*  | Indefinite<br>Quantity  | Requirements  |   | Cost Plus<br>Award Fee**  | Cost Plus<br>Incentive Fee**  |
| Essential Elements  |  |  |   |   |   |   |   |   |
| Reasonably definite design or performance specifications available.<br><br>Fair and reasonable price can be established at outset.<br><br>Conditions for use:<br>Adequate competition.<br>Prior purchase experience of the same, or similar, supplies or services under competitive conditions.<br>Valid cost or pricing data.<br>Realistic estimates of proposed cost.<br>Possible uncertainties in performance can be identified and costed.<br>Contractor willing to accept contract at a level which causes him to take all financial risk.<br>Any other reasonable basis for pricing can be used to establish fair and reasonable price.<br>Maximizes contractor's incentive to perform efficiently. | Quantity required is indeterminate but a reasonable estimate is known and reasonably definite design or performance specifications are available for units.<br><br>Firm fixed price (lump sum) can be established based on delivery of a target (estimated quantity) quantity at a fixed price per unit.<br><br>A "variations in estimated quantities" clause is required to allow equitable adjustment between target quantity and actual quantity delivered.<br><br>Conditions for use: (see firm fixed price) | Cost uncertainties exist but there is potential for cost reduction and/or performance improvement by giving contractor a degree of cost responsibility and a positive profit incentive.<br><br>Profit is earned, or lost, based upon relationship that contract's final negotiated cost bears to total target cost.<br><br>Contract must contain: target cost, target profit, and selling price, and profit sharing formula.<br><br>There are two forms of this contract: firm target (FPIT) and successive targets (FPIS).<br><br>Firm target: firm target cost, target profit, and profit sharing formula are negotiated into basic contract, profit is adjusted upon contract completion. | Contract is firm fixed price at start based on definitive specifications but contract permits the payment of an additional fee or portions thereof for exceptional performance.<br><br>Contract shall state maximum amount of additional fee which may be paid.<br><br>Provides for evaluation of contractor performance at stated times (usually not more often than quarterly) by a board.<br><br>Contract must provide clear and unambiguous evaluation criteria.<br><br>Incentive fee amounts awarded by evaluation board are based on performance during the stated period (no carryover). | Use where it is impossible to determine in advance the precise quantities of supplies or services that will be needed by designated activities during a definite contract period.<br><br>A base or target amount of each item is included for bid evaluation purposes.<br><br>A stated minimum (guaranteed) shall be ordered by the government during the contract period. Further, a maximum amount to be ordered is to be specified.<br><br>Method of ordering work must be stated as well as minimum/maximum orders allowable during a specified period of time. | Use where it is impossible to determine in advance the precise quantities of supplies or services that will be needed by designated activities during a definite contract period.<br><br>Method of ordering work must be stated as well as minimum/maximum orders allowable during a specified period of time.<br><br>Government is obligated to order from successful contractor and no other source all supplies or services described in the contract which it requires during the stated contract period.<br><br>Contract contains estimated quantities used for bid evaluation, and clearly states that the government is not obligated to place any minimum orders (obligation is solely based on need required to be filled by that contractor). | Not possible at time of contract preparation to accurately estimate the scope (extent or duration) of work required with high degree of confidence so as to fix price the work.<br><br>Calls for provision of direct labor hours at a bid hourly rate (total cost/hr) and provision of materials at a designated cost (including applicable discount allowances).<br><br>Contract contains estimated quantities used for bid evaluation purposes. | Contract completion is feasible, incentives are desired but performance not susceptible to finite measurement.<br><br>Provides for subjective evaluation of contractor performance.<br><br>Contractor is evaluated at stated times during performance period.<br><br>Contract must contain clear and unambiguous evaluation criteria to determine award fee.<br><br>Award fee is earned for excellence in performance, quality, timeliness, ingenuity, and cost effectiveness and can be earned in whole or in part.<br><br>Two separate fee pools can be established in contract: a base fee not to exceed 3% of the contract's estimated cost and an award fee. | Development has a high probability that it is feasible and positive profit incentives for contractor management can be negotiated.<br><br>Performance incentives must be clearly spelled out and objectively measurable.<br><br>Fee range should be negotiated to give the contractor an incentive over various ranges of cost performance.<br><br>Fee is adjusted by a formula negotiated into the contract in accordance with the relationship that total allowable cost bears to target cost.<br><br>Total fee cannot exceed the statutory limits shown in DAR 3-405.6 (c)(2): A&E-6%, production and services-10%, and R&D-15% of estimated cost. |

continued

Figure 2.2

TYPES OF CONTRACTS - COMPARISON AND SUMMARY (continued)

| Fixed Price<br>(greatest risk on contractor)   |   |   | Open End  |   | Time<br>and Materials  |  | Cost Reimbursement<br>(greatest risk on government)  |   |
|--|---|---|---|---|--|--|--|---|
| Firm Fixed Price<br>(lump sum)   | Unit Price<br>(est. quantity)   | Fixed Price<br>Incentive <sup>a</sup>   | Fixed Price With<br>Quality Incentive <sup>a</sup>  | Indefinite<br>Quantity  | Requirements   |  | Cost Plus<br>Award Fee <sup>a</sup>  | Cost Plus<br>Incentive Fee <sup>a</sup>   |
| Essential Elements (continued)   |   |   |   |   |  |  |  |   |
|  |   | Successive targets:<br>Initial cost and pro-<br>fit targets are<br>negotiated into<br>contract but final<br>cost target (firm)<br>cannot be negotiated<br>until sometime dur-<br>ing performance.<br>Contains production<br>point(s) at which<br>either a firm target<br>and final profit<br>formula, or a firm<br>fixed price contract,<br>can be negotiated.<br><br>Elements which can<br>be incentivized are:<br>costs, performance,<br>delivery, and quality. |   |   |  |  | The total award fee<br>plus base fee cannot<br>exceed the statutory<br>limits shown in<br>DAR 3-405.6(c)(2):<br>A&E-6%, production<br>and services-10%,<br>and R&D-15% of<br>estimated cost.<br><br>Award fee earned by<br>contractor is deter-<br>mined by the con-<br>tracting officer and<br>is often based upon<br>recommendations of<br>an award fee eval-<br>uation board.<br><br>CPAF contract is<br>often used in con-<br>junction with other<br>contract types. | Contract must contain<br>target cost, target fee,<br>minimum and max-<br>imum fees, and fee<br>adjustment formula.<br><br>Fee adjustment is<br>made upon com-<br>pletion of contract.   |
| Limitations  |   |   |   |   |  |  |  |   |
| Price not subject to ad-<br>justment regardless of<br>contractor performance<br>costs.<br><br>Places 100% of finan-<br>cial risk on contractor.<br><br>Places least amount of<br>administrative burden<br>on contracting officer.<br><br>Preferred over all<br>other contract types.<br><br>Used with advertised<br>or negotiated procure-<br>ments. | Reduces contrac-<br>tor's fixed price<br>risk per unit due<br>to equitable<br>adjustment based<br>upon actual per-<br>formance (quantity<br>delivered).<br><br>Unit pricing with<br>adjustment may be<br>utilized in conjunc-<br>tion with lump sum<br>fixed price items in<br>same contract. | Requires adequate<br>contractor account-<br>ing system.<br><br>Contracting officer<br>must determine<br>that contract type<br>is least costly and<br>award of any<br>other type would<br>be impractical.<br><br>Government and<br>contractor admin-<br>istrative effort is<br>more extensive<br>than under other<br>fixed price con-<br>tract types.  | NAVFAC allows use only<br>by formal advertising.<br><br>Performance must be<br>objectively measurable<br>(i.e., "exceptional" vs<br>minimum requirements<br>of contract).<br><br>No additional incentive<br>fee is added when addi-<br>tional work is added to<br>contract (added work is<br>not considered in per-<br>formance incentive<br>evaluation). | Funds are obligated by<br>minimum (guaranteed)<br>amount and thereafter<br>by individual orders.<br><br>Provides flexible quan-<br>tity and delivery sched-<br>ule w/limited govern-<br>ment obligation.<br><br>A fixed unit price<br>schedule (Schedule<br>of Prices) is required<br>prior to award which<br>provides basis of<br>cost for items to<br>be ordered. | Funds are obligated<br>by each order and<br>not by contract.<br><br>Provides flexibility<br>in quantity and de-<br>livery schedule as<br>orders are placed<br>only after need<br>materializes.<br><br>Contractor is<br>willing to main-<br>tain stock in<br>light of govern-<br>ment's obligation. | Requires use of<br>time and cost<br>standards appli-<br>cable to particular<br>work items.<br><br>Requires appro-<br>priate surveillance<br>by government<br>personnel.<br><br>Funds are obli-<br>gated by each<br>work order. | Weighted guidelines<br>will not be used to<br>determine either<br>base or award fee.<br><br>Government's deter-<br>mination of amount<br>of award fee earned<br>by the contractor is<br>not subject to dis-<br>putes clause.<br><br>CPAF contract can-<br>not be used to<br>avoid either CPFF<br>or CPFF types if<br>either is feasible.   | Difficult to<br>negotiate range<br>between the<br>maximum and<br>minimum fees so<br>as to provide an<br>incentive over<br>entire range.<br><br>Performance<br>must be objec-<br>tively measure-<br>able.<br><br>Costly to admin-<br>ister. Contractor<br>must have an ade-<br>quate accounting<br>system. |

continued

TYPES OF CONTRACTS -- COMPARISON AND SUMMARY (continued)

| Fixed Price<br>(greatest risk on contractor)   |  |  |   | Open End  |   | Time<br>and Materials  | Cost Reimbursement<br>(greatest risk on government)   |                              |
|--|--|--|---|---|---|--|---|------------------------------|
| Firm Fixed Price<br>(lump sum)   | Unit Price<br>(est. quantity)  | Fixed Price<br>Incentive*  | Fixed Price With<br>Quality Incentive*  | Indefinite<br>Quantity  | Requirements  |  | Cost Plus<br>Award Fee**  | Cost Plus<br>Incentive Fee** |
| Limitations (continued)  |  |  |   |   |   |  |   |                              |
| To facilitate proper benefit for adjustment, establishment of the target (estimated) quantity must be realistic - i.e., the range of expected actual delivery is reasonably well known.<br><br>Places burden on contracting officer of providing for accurate recording of quantities delivered.<br><br>Used with advertised or negotiated procurements for construction only. | Used only with negotiated procurements.  | Deletion of work items requires compensating deletion in incentive fee.<br><br>Contract must state that board decision is not subject to appeal. | Minimum amount stated must be more than a nominal quantity (reasonable), yet it should not exceed the amount which the government is fairly certain to order. |   |   | If no standards of pricing exist, there is no encouragement for contractor effective cost control. | Should not be used if the amount of money, period of performance, or expected benefits are insufficient to warrant additional administrative effort.<br><br>Very costly to administer. Contractor must have an adequate accounting system.<br><br>Generally, not used for engineering development or operational system development if contract definition has been accomplished. |                              |
|  |  |  |   |   |   |  |   |                              |
| Subsidiarity   |  |  |   |   |   |  |   |                              |
| Majority of NAVFAC procurements preferred for construction and maintenance services that are reasonably well defined.  | Construction contracts for pile driving, excavating, dredging, and similar specialized work. | Base operating service contract for all or substantially all maintenance and operation services.   | NAVFAC restricts use to janitorial contracts or contracts where historically satisfactory performance has been difficult to obtain.                           | Primarily suited for work known to be needed during a specified contract period but the exact time and quantity is indefinite, such as: housing change of occupancy services which are dependent upon occupant moves. | Primarily suited for procuring supplies or services known to be a requirement but the exact timing and quantity required are not predictable, such as: emergency road service for vehicles. | Repair, maintenance, and overhaul work for motor vehicles is most common use by NAVFAC.            | Where conditions affecting performance are unknown, such as major rehabilitation of inactive base, exploratory/experimental work, war zone work.  |                              |
| DAR  |  |  |   |   |   |  |   |                              |
| 3-404.2  | 3-404.1  | 3-404.4  | 3-404.2/3-407   | 3-409.3   | 3-409.2   | 3-406.1  | 3-405.5   | 3-405.4                      |
| P-68   |  |  |   |   |   |  |   |                              |
| 2-201/9-102.1  | 2-202  | 9-102.3  | 9-102.4   | 9-102.5   | 9-102.5   | 9-102.2  | 2-207   | 2-207                        |

\*Specific approval of Code 021 NAVFAC required prior to use.

\*\*Cost basis contracts require CNM or SECDEF prior approval as appropriate; these contracts are used for negotiated procurements only.

general procurement spectrum. The required process is taken into the corporate structure and all risk and reward is assumed by the parent for the successful completion. This technique is not practical if the parent does not have the required expertise. It is generally not cost effective to maintain state of the art technology in all areas of needed services. Additionally, the amount of service required may not justify start up expenditures for the new process.

"Partnering" solves some of these contracting problems of risk and reward by merging the goals of the owner and supplier. In one sense partnering attempts to create an atmosphere where the supplier of the service acts as if he were a part of the parent corporation. However, the supplier may also have many other clients. Partnering allows the supplier to continue to concentrate on the business he knows best. Ford Motor Company offers a traditional partnering concept which is discussed in more detail in a Chapter Three. Briefly, Ford Motor Company uses a sole source partner to perform several work items in the automobile manufacturing process such as painting and body manufacture. These "partners" perform services that were once performed in-house by Ford, but now are provided through a partnering arrangement with an outside firm.

[Stralkowski and Billon, 1988]

### CHAPTER III

#### PARTNERING IN INDUSTRY

Partnering in industry may take many forms. Among them are a relationship between a manufacturer and supplier or a manufacturer and distributor. In many applications, partnering fits the role of customer and supplier. The construction industry fits the customer/supplier model with the contractor and/or engineer providing a product for the owner (customer).

The following examples describe partnering relationships in representative industries. One will see that although each application is markedly different, each exhibits the traits discussed earlier.

## PULP AND PAPER INDUSTRY

The Pulp and Paper industry has moved toward "partnering" as a response to increased global competition forcing paper companies and their suppliers to combine resources to remain competitive. Paper companies are using supplier partnerships to produce a quality product at a lower cost. "What was once a mutually exclusive environment between suppliers and producers has slowly shifted to a more symbiotic relationship." [Nelson,1990] Although the relationships tend to be designed to protect the parties from the downside risk of inferior supplies or products, the partnerships have developed into productive long term relationships. An industry analyst reports:

"There are too many suppliers for the available business... the cost of staying in the market is high due to the enormous research and development effort required... and the move by the process industries in general, and the paper industry in particular, is to single-source responsibility." [Nelson, 1990]

These single-source relationships are taking the form of strategic partnering relationships.

"From the paper maker's perspective, the advantages of a single source of supply are reduced costs, complete accountability, supplier loyalty, and a better end product. For the supplier, the benefits include attracting new business, improving profit margins and establishing a long-lasting relationship." [Nelson, 1990]

One attribute stressed in the partnering relationships is that communication and high ethical standards are a key to maintaining a high standard of quality. Without a sincere commitment to quality, the partnership will not have the profitable effect desired.

PIMA Magazine, an industry publication, interviewed three prominent paper industry executives about partnering. James Malloy, President and Chief Operating Officer of Jefferson Smurfit Corporation and Container Corporation of America, describes the uniqueness of a partnering relationship and the tremendous obligation it entails. In one instance a customer was doing a study of the supplier's manufacturing plant at his own expense to determine if a particular quality improvement could be made. As the customer explained: "If you can improve your (the supplier's) make-ready time, it makes you more efficient and at the end of the day we're going to get the benefits too." ["James Malloy...",1989] In this sense, customers are working with single source suppliers for mutual efficiency.

In another area, Smurfit provides contract packaging design work, performance testing, market research, and actual packaging, for large customers such as Proctor and Gamble, Colgate-Palmolive and Lever Brothers. This integration of services coupled with long term relationships



strengthens the sole-source supplier bond and is mutually profitable. In some instances, the customers rely on Smurfit for 100 percent of their packaging work.

Archie Dunham, group Vice President, Chemicals and Pigments, for the Du Pont Company describes the way partnering has changed business practices in the paper industry in this manner:

"In the past, we took the products of our research efforts and proceeded to seek the right "fit" for them in the marketplace. Today, we first try to determine the customer's problems and needs and then try to solve them through focused research and development programs.

Technology is advancing at such a fast clip that no corporation can be an expert in everything. By forming strategic alliances, all players in the distribution chain - the supplier, the customer and the consumer - can share the burden and benefits of developing a specific expertise. With partnerships, developing a commercial product from new technology happens faster and more efficiently."["Archie Dunham...",1989]

Phil Taddeo, vice president of Procurement and Logistics for Scott Paper Company, discusses how "backward integration", or performing more services in house, develops a tendency to "perform particular functions to perfection separate from other functions." "Over time this promotes functionalism - looking at a department as an isolated function rather than part of a whole." He claims that partnering can erase this type of mind allowing partners, whether they are customers, suppliers, or employees, to

become stakeholders in the operation and share both the risks and the rewards.

"In the late '60s we began a process people call partnering. Some people call it partnerships, stakeholders, mutual win/win. There are all kinds of words, but it tends to be the same concept. I was involved as a corrugated procurement manager at the time. We were reducing the total number of suppliers we used and improving the total effectiveness of our remaining suppliers by building partnerships. We went from getting bids every quarter, which was not value-adding, to buying on a multi-year basis. It made sense. Certain suppliers were more effective on cost, quality and service. They could help our company win."

"When buyers and suppliers are "married" for more than one year, they get a different perspective. With partnering, you show the supplier what you want to do, and they tell you how they can serve that need. That way you can explore what the efficiencies and savings for both sides are and share them.

The idea is to work as if you were an integrated operation. I can go into my own operation and say "boy, that's not necessary," or "I've got to do more of that." The ideal is to be able to do that with suppliers too. I think we're more able to visit suppliers and see their processes with our operating people and vice versa so they can better appreciate exactly where and how the product is used." [Phil Taddeo..., 1989]

Mr. Taddeo also emphasizes that partnering involves a commitment from the entire organization. "We have hosted and been hosted by our partners at plant visits and other shared events. Hourly and salaried workers at all management levels have participated in an open dialogue that has built camaraderie between the two partners and transcends the business. The partners are genuinely

interested in what happens."

The main barrier to partnering, according to Mr. Taddeo, is not wanting to give partners full access to information. However, without full information, the partner cannot make completely informed decisions about how best to support the partnership. ["Phil Taddeo...", 1989]

## FORD MOTOR COMPANY

The following section is drawn from an article in the National Productivity Review, Spring 1988 issue, concerning The Ford Motor Company and partnering. [Stralkowski and Billon, 1988]

The Ford Motor Company is an excellent example of how partnering can be used and where partnering is applicable. In the early 1900's, Henry Ford obtained virtually all the components for his automobiles from outside suppliers. These suppliers were in effect partners since the growth and profitability of these suppliers were dependent on the success of the Ford Motor Company. There was not a great deal of competition for the supplier's products. In later years, Ford integrated most of the component supply into his own firm. The historic Rouge River Plant for instance, took in iron ore at one end and shipped out cars from the other. During this episode, the role of suppliers was clearly subordinate and even adversarial.

Today, the Ford Motor Company is again pursuing business relationships with "partners". Responsibility and accountability for many component's design and delivery go to the suppliers. "Ford does seem to be acknowledging that it should stick to those things it does best and turn over other activities to "partner suppliers" and even "partner

competitors" when they can do them better."

At first glance, complete integration would seem to be the key to gaining a competitive advantage. This integration could be described as "the ultimate partnership." The Ford Motor Company was successful with integration at the Rouge River plant. However, some shortcomings of integration of operations are apparent:

1. STANDARDIZATION. A company will tend to standardize its policies across its integrated organizations. But an advantageous policy in one industry segment in the production and marketing chain may turn out to be a competitive disadvantage in another.

2. TRYING TO BE THE BEST IN ALL SEGMENTS. Integration may require the company to compete in an industry segment in the production chain where it has little competence.

3. INFLEXIBILITY In an integrated company, a large investment in people, ideas, and interlocking equipment may reduce the ability to change.

Partnering, on the other hand, allows two companies to cooperate to an unusually high degree without a merger or integration of one company into another. This alternative management technique allows Ford (as well as others) to realize the advantages of integration while minimizing the disadvantages.

Ford Motor Company uses partnering to cooperate with other companies in a venue of mutual trust and commitment but stopping short of a merger. Figure 5.1 illustrates how commitment and reward are related for a supplier and customer relationship such as Ford's.

The Ford Motor Company sees several advantages to partnering relationships with suppliers. Among them are:

1. The advantages of an integrated company with increased cooperation while avoiding the disadvantages of integration discussed above.

2. "Each partner can enhance its own competitive position through the knowledge and resources shared by the other." As an example, Ford turned over its paint business to Du Pont. Ford Management felt that its overall competitive position could be improved if the paint operation were turned over to a supplier with greater competence in finishes.

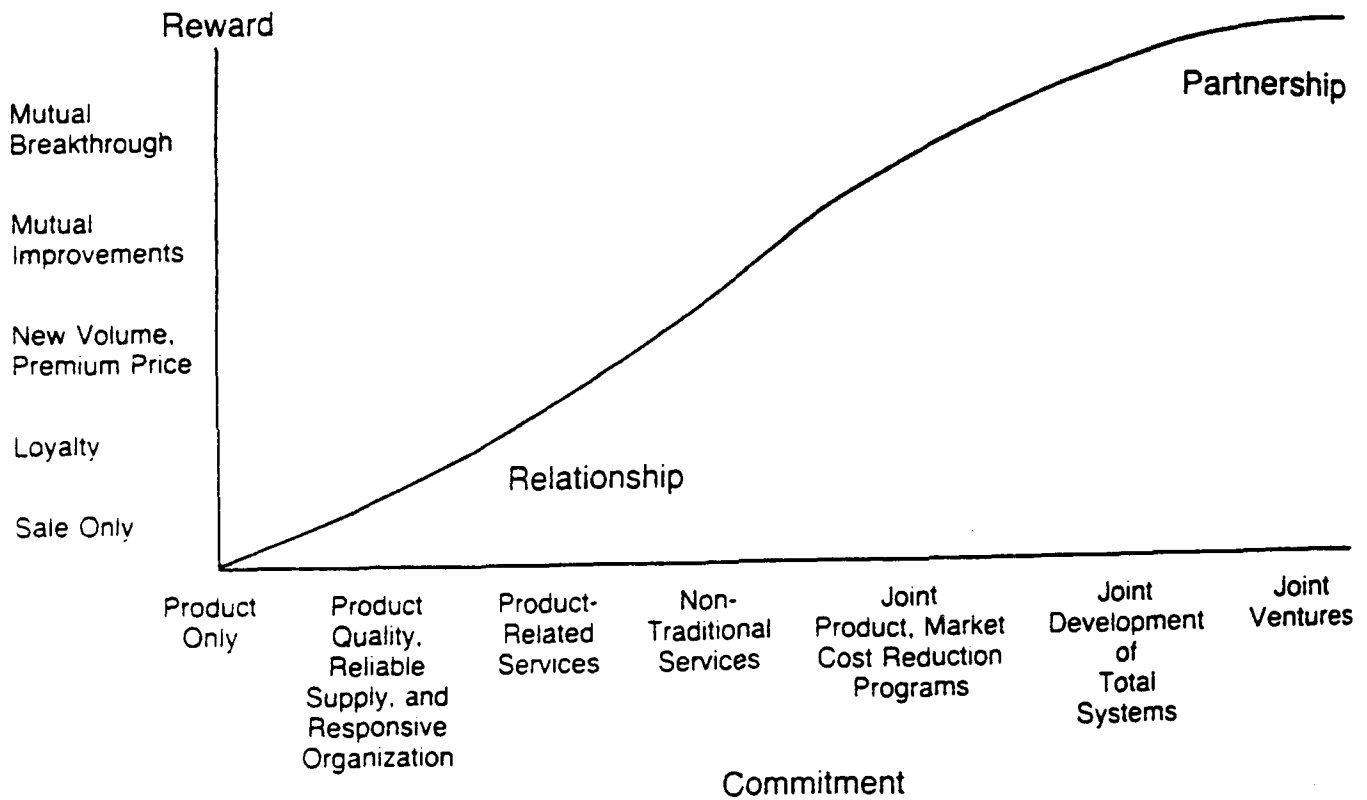
3. "The partnership can be flexible. In comparison to an integrated company, the partnership can easily be modified or even dissolved when the benefits are realized or when it is clear that changed circumstances have ended the partnership's advantages."

FIGURE 3.1

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**LEVELS OF CUSTOMER-SUPPLIER COOPERATION**



[Stralkowski and Billon, 1988]

4. "Multi-partnerships are possible....Different objectives can be pursued with different partners. The objective is to select the partner that can bring the most complementary competence to the opportunity being pursued. An integrated company would be at a disadvantage here because of the difficulty in securing cooperation from direct competitors." [Stralkowski and Billon, 1988]

In summary, the Ford Motor Company has accomplished its objectives using varying strategies from in-house production to competition among suppliers for products to partnering relationship. Each method has its advantages and disadvantages. The alternative management strategy of partnering exhibited by Ford offers many of the advantages of integration while avoiding the pitfalls. However, this strategy cannot be seen as a panacea. The concept of partnering exacts a price of commitment and trust as discussed in the earlier chapters. In many industries, the desire to maintain "trade secrets" or manufacturing procedure information is a stumbling block to a partnering arrangement. Additionally, a strong long term commitment to the supplier or customer is not always appropriate.



## CHEMICAL INDUSTRY

Shell Oil Company has a partnering agreement with S.I.P. Engineering for oil field engineering services. In a paper presented to the 20th Annual Engineering and Construction Contracting Conference, Association of Industrial and Chemical Engineers (AIChE), September 1988; R.D. Provost, manager of the machinery and electrical equipment group for Shell Oil Engineering, and R. S. Lipscomb, project director for S.I.P. Engineering, discussed the success of their partnering relationship.[Provost and Lipscomb, 1990] They believe that trust and openness are the keys to a successful partnering relationship. The partnership must have support throughout both organizations and the "principals in both organizations must be convinced that the other will bear in mind their interest". In addition, the relationship must be long term. S.I.P. and shell have had a business relationship for over 18 years. "The result has been a focus on long-term benefits and less on short-term difficulties, except as learning experiences." The partners must act to make the relationship win-win and feel an obligation that the other party benefits from the relationship.[Provost and Lipscomb, 1990]

The participants also list several things that a partnering arrangement is not. Among them are:

1. The partnering agreement is not a guarantee of contractor profit. "The partnering work S.I.P does for Shell is all reimbursable. But Shell continually monitors it to assure that it is competitive in cost as well as in quality. If S.I.P. does not operate in a cost-effective manner, we both understand the relationship will be terminated."

2. By the same token, the partnering arrangement does not preclude a fair profit for the contractor. "Shell continually compares the overlay for the partnering work with the engineering marketplace in Houston and when appropriate, the rate is adjusted. Plus, we have a significant incentive program directed to areas that S.I.P. and Shell think would improve our relationship."

The Shell/S.I.P relationship is that of an owner/contractor. The authors relate several prerequisites for the owner and contractor for a partnering agreement of this type to succeed.

#### OWNER PREREQUISITES

1. There must be a need within the owner's organization.

2. The owner must be willing to accept alternative methods to achieve the desired end product.
  3. The owner must be willing relinquish some of the control of the project and allow the partners to make necessary decisions.
  4. The owner must be able to admit his own mistakes.
  5. Senior management must be completely committed to the success of the partnering relationship.
  6. The owner must have trust in the contractor.
- In Shell's case, this trust is expressed as:

"Trust that the contractor will be open and honest about his capabilities and his mistakes, and that the contractor won't argue to take on more work or the kind of work he can't do well. Trust that the contractor shares the goal and the commitment to make the partnering arrangement a success until it is agreed that it be terminated." [Provost and Libscomb, 1990]

#### CONTRACTOR PREREQUISITES

1. The contractor must be motivated and be able to conform to the owner's culture.
2. The contractor must take on many tasks that are traditionally accomplished by the owner.
3. The contractor must provide complete and correct work on the first try.

4. The contractor must be willing to assume initiative beyond that of the traditional contractor.

5. The contractor must accept accountability for all aspects of his work.

6. The contractor must have a similar commitment to success and support from top management as the owner's organization.

#### OWNER ADVANTAGES

1. Reduction of project-related demands on Shell's staff. "The ultimate in our partnering occurs when each partner provides what he is able without review, checking or verification by the other."

2. Increased flexibility and responsiveness in terms of added skills and resources. "S.I.P. has skills that Shell does not have nor has an every day need for, but which occasionally are very important. In the partnering arrangement, S.I.P. is dedicated to respond."

3. Improved project scope definition at project start. "When the costs of milling around trying to consider all the various alternatives in a project are made apparent (versus when the owner

does it with his own staff), people tend to get on with deciding what is really required."

4. The long term relationship tends to bring about "added attention in the contractor's organization."

#### CONTRACTOR BENEFITS

1. A base workload. Even though there may not be a guarantee of work, the long term relationship allows the contractor to plan more for the long term.

2. "Opportunity to refine and develop new skills in a controlled and low-risk way. Our partnering projects have provided the impetus to adopt specific engineering software packages and design aids preferred by Shell." In particular, the partnering relationship allows implementation of concepts like:

- Constructability
- Construction-driven scheduling
- Individual and company incentives
- Quality as a process
- Cost of quality measuring systems
- Enhanced material systems

Projects are selected for the S.I.P. team that range from \$4MM to \$20MM and tend to allow S.I.P. to maintain responsibility and accountability for the lifetime of the project. Shell has noted that "there is a positive correlation between early involvement of the partnering team and the success of the project."

The partnering relationship, like all others, is not problem free. The authors report that most of the problems encountered tend to be either a resistance to change or reliance on the "master/slave tradition". Organizational change was required of both companies to make partnering a success. Additionally, Shell as an owner, had to accept a perceived risk in allowing the contractor to take on greater responsibility and accountability. S.I.P., as a contractor, had to break away from the comfortable role as "slave", and accept greater accountability for the work.

In order to solve some of the initial problems of adapting to partnering, S.I.P. created

"an image of elite corps. Those involved in partnering are housed in separate buildings, are involved in numerous team-building efforts, are eligible for individual incentive awards based on partnering performance, and are encouraged to view the partnering assignment as requiring a higher level of technical skill and more attention to quality issues. [Provost and Libscomb, 1990]

The partnering relationship appears to be a resounding success for Shell and S.I.P. As to the perceptions of the

future of the partnering relationship, the authors write:

"Our partnering relationship is now functional, maintainable and is likely to execute successful projects.

We intend to expand use into more of Shell's operation and facilities where capital projects are being done. It is an acceptable solution to internal resource limitations.

We intend to continue to extend the capabilities of the partnering organization. One aspect of this extension is the execution of projects with more difficult interfaces.

A second aspect is to execute projects using different execution strategies. We currently are doing our first project in which the partnering organization is managing and providing technical approvals for a third party EPC contractor.

A third aspect is to continue a progressive approach in adopting and utilizing innovative techniques as they are developed in our industry. We intend to implement CII guidelines as a matter of policy.

Last, we recognize the need to continue to nurture and grow the new partnering culture. It requires maintenance." [Provost and Lipscomb, 1990]

## Du Pont

Du Pont has a similar relationship (to that of Shell/S.I.P.) with both MK-Ferguson and Fluor Daniel for construction and engineering services on an open end basis. According to Robert H. Miller, director of Du Pont's project engineering division: "We commit the work and they commit quality people and flexibility. We know and trust them and they trust us." [Rubin and Lawson, 1988][Wilkinson, 1988]

"Du Pont once did all of its own engineering work, constructing more than 100 grassroots plants. But in recent years the need for smaller, more flexible and less expensive plants became the order of the day. Moreover, this need occurred at a time when manpower cutbacks were depleting the company's ability to meet its goals. This led Du Pont into its partnership with Fluor Daniel. The agreement was that a dedicated group from the E/C would be committed to Du Pont work. The E/C would in turn get about a third of some \$2 billion worth of work planned by Du Pont. So in June 1986, Fluor formed Delta Division, now working on about \$500 MM worth of projects with a 450-employee workforce." [Vervalin, 1989]

A short history of the Du Pont/Fluor Daniel relationship is illustrative of the common sense approach that leads to partnering. The following discussion with Raymond F. Crickenberger, design manager for Du Pont's engineering department, appeared in the September 1988 edition of the Engineering News Record:

Before getting involved with Fluor Daniel, Crickenberger says, Du Pont built up a large



internal engineering department that constructed plants for Du Pont, the government and several competitors. "We never needed outside help. We felt no one could do it as well as we could," he explains. "This turned out to be a major hurdle for us to overcome as we began to utilize contractors of any kind."

Then Du Pont began to hunt for cost-cutting opportunities. The company started cutting the engineering staff, but not its \$1-2 billion, 400-projects/year workload. The solution was to use contractors. But that had drawbacks: After a team was trained for one project, the group would break up and the same people could never be brought together again. To solve that problem, Fluor Daniel agreed to devote a division of 300 people to Du Pont work. Fluor Daniel has increased the division to about 480 people currently working on 18 different projects worth \$350 million; the company has another 120 people operating out of Europe on Du Pont work" [Wilkinson, 1988]

The Fluor Daniel partners in the Fluor Daniel/Du Pont relationship relate the same themes as discussed previously. Specifically:

1. A concern about security of proprietary know-how.
2. Owner acceptance of other ways of accomplishing project.
3. Contractor conforming to the owner's corporate culture.

This type of open-ended commitment is a common type of partnering which occurs frequently in the small dollar end of the engineering/construction industry though it is not

known by the term partnering. The practice has been common for many years although the term has not come into use until recently. As an example, a small engineering firm in North Carolina began work in 1965 with a particular client. The client was a residential developer and the engineer performed general civil engineering services, sewer, water and road design, and surveying for the client. As the relationship developed, the engineer became the sole source for engineering services used by the developer. The engineer's staffing was based on the developer's work load. As the mutual relationship grew, both parties began to direct their efforts toward the productivity of the other party. Although this relationship was conducted without a contract for a long term relationship, the results show a prime example of partnering. The following traits were exhibited:

1. long term
2. commitment
3. Quality work the first time
4. mutual benefit, risk and reward

To the participants in this example, as well as to many others in industry, partnering is a new word for "good business practices" that they use routinely. The traits and characteristics of the partnering management approach is simply "good business" to many.

## INTERNATIONAL

On the international scene, partnering may have future potential as a way to increase competitiveness in foreign markets. James F. Bere', Chairman of Borg-Warner Corporation, several key observations about global joint ventures which are applicable to partnering relationships.

1. "Make sure senior management and the board of directors get a genuine indoctrination in the business culture of your partners.
2. "Operational commitment must be genuine."
3. "A continuing presence in the operation of the joint venture is essential."
4. "Timing is critical." Partnerships are only worthwhile when both parties have strengths to offer. [Bere', 1987]

As we expand into global markets, partnerships with foreign companies can be a key in successful competition. The foreign company will bring knowledge of the global culture, marketing strategies, etc. to the partnership. For a true partnering relationship, the U.S. company must also bring valuable strengths to the relationship.

## CHAPTER IV

### Construction Industry Institute

The Construction Industry Institute formed a Task Force in the spring of 1988 to evaluate the feasibility of partnering as a management tool in construction. Appendix A lists several existing partnering relationships examined by the institute and brief comments from the partners on the results of the relationships. An interim progress report was published for the 1989 Annual meeting of the Construction Industry Institute (CII).

"The concept of partnering is based on the premise that important but complementary opportunities may exist between two companies, whether they have a customer-client relationship or competitor-competitor relationship, but barriers exist that prevent them from working together. However, if the right people are brought together with effective organizational process, these barriers can be eliminated and mutually beneficial relationships can be established."["Partnering: Meeting the Challenges...", 1989]

As part of its research, the CII conducted a survey of firms known to be involved in partnering arrangements. The survey involved sending a questionnaire to seven owners and eleven contractors (A/E's and general contractors). Figure 4.1 shows the percent agreement concerning the effect that

partnering will have on Quality and performance. It appears that all participants see a positive influence from partnering.

Figure 4.1

| Effect of Partnering on Quality and Performance      |             |       |
|--|-------------|-------|
| Statement  | % Agreement |       |
|  | Contractor  | Owner |
| Project schedules will be more dependable            | 91%         | 86%   |
| There will be fewer engineering errors and omissions | 91%         | 100%  |
| Safety will improve in terms of:                     |             |       |
| a. Frequency ratio                                   | 73%         | 43%   |
| b. Severity ratio                                    | 73%         | 43%   |
| Constructability will improve                        | 100%        | 71%   |
| Resource planning will improve                       | 100%        | 100%  |
| Innovation will improve project performance          | 91%         | 100%  |

Figure 4.2 shows the expected cost benefits (minus sign indicates a decrease in cost) resulting from a partnering arrangement. According to the Task force, "There were no instances where one party was expected to suffer at the expense of another, nor were there any anticipated increased cost impacts." A summary of expected costs of partnering is shown in Table 4.3.

Figure 4.2

| COST OF PARTNERING     |               |       |
|------------------------|---------------|-------|
| Cost Area              | % Cost Change |       |
|                        | Contractor    | Owner |
| Direct Costs           |               |       |
| Engineering            | -4%           | -7%   |
| Procurement            | -4%           | -3%   |
| Construction           | -5%           | -5%   |
| Cost of rework         | -9%           | -12%  |
| Administrative Costs   |               |       |
| Management and support | -4%           | -9%   |
| Legal                  | -12%          | -10%  |
| Accounting and finance | -9%           | -9%   |
| Sales and marketing    | -14%          | 0%    |
| Contractor selection   | -13%          | -14%  |
| Building and utilities | -3%           | -6%   |
| Training               | 0%            | -1%   |

Figure 4.3

| COST OF PARTNERING |               |            |
|--------------------|---------------|------------|
| Project            | % Cost Change |            |
|                    | Owner         | Contractor |
| Overall Cost       | -5%           | -5%        |
| Owner Cost         | -11%          | -10%       |
| Contractor Profit  | +4%           | +9%        |
| Project Schedule   | -5%           | -6%        |

Finally, tables 4.4 and 4.5 show the ranking that the survey participants gave the reasons for entering a partnering relationship as well as the management concerns about entering into partnering agreements.

Figure 4.4

| Business Strategies that Led to Partnering    |            |       |
|---|------------|-------|
| Strategy                                      | Ranking    |       |
|   | Contractor | Owner |
| Continuing a successful previous relationship | 3          | 1     |
| Long-term workload commitment                 | 2          | 2     |
| Cost effectiveness                            | 4          | 4     |
| Change in business climate                    | 6          | 3     |
| Manpower leveling                             | 1          | 6     |
| Willingness to share risks                    | 5          | 5     |

Figure 4.5

| Management Concerns in Partnering                    |            |       |
|--|------------|-------|
| Concern  | Ranking    |       |
|  | Contractor | Owner |
| Relationship must be based on trust                  | 1          | 1     |
| Selection of team personnel                          | 2          | 2     |
| Changing attitudes from adversarial to co-operative  | 3          | 5     |
| Risk of failing to work together                     | 4          | 3     |
| Need for innovative technology and management skills | 10         | 4     |
| Assignment of team responsibilities                  | 8          | 6     |
| Partnering team leadership                           | 9          | 7     |
| Relations between team and non-team personnel        | 5          | 8     |
| Owner involvement in cost and time estimates         | 7          | 10    |
| Resolution of performance problems                   | 6          | 9     |

If one compares the results of this survey with the comments from the other partnering arrangements discussed in this paper, one sees a strong similarity in the goals, benefits, and concerns of partnering across a wide range of industry types and types of partnering arrangements. There appears to be wide agreement that a partnering relationship will have a positive impact on quality and performance at a reduction in cost or increase in profit. It is also interesting to note the results shown in Table 4.4, the business strategies that lead to partnering. From the contractor's perspective, the ability to level manpower assets and a long-term work commitment are the top ranked reasons to seek a partnering relationship. From the owner's perspective however, the top reason cited is to continue a successful previous relationship.

The interim report also provides guidelines on selecting a partner and a flow chart for implementing a partnering relationship. The implementation flow chart is shown in Appendix B. This chart emphasizes the partnering goals discussed earlier. Of particular note is the emphasis placed on communicating goals and objectives to both parties in order to blend the organizations together. The chart also shows that the partnering relationship is a long term relationship and requires continuous monitoring and improvement.



Scott Baker, a member of the CII Partnering Task Force and director of Energy projects for RUST International Corporation, Birmingham, Alabama, examined why a business would choose partnering over other forms of contracts.

Among his reasons are:

1. Lack of Personnel. An organization's need for engineering and construction services may exceed its in-house capability.
2. In-house Skills Renewal Not Occurring. The firm cannot maintain expertise in all areas.
3. Optimal Project Planning. Project costs can be better controlled through early (planning and design stage) coordination with the partnering team.
4. Cost reduction.
5. Prospect of long-term workload.
6. Focus on Quality Management. [Baker, 1990]

The bottom line, of course, is to improve quality and profits.

"Any mechanism that promotes trust and encourages communications over the long term will help create an environment for quality improvement. This environment, coupled with commitments to excellence from senior management within both organizations, will provide fertile ground to capitalize on the synergies of an open and trusting relationship." [Baker, 1990]

Partnering, as defined by CII, can take on many forms of

relationships, but all forms again exhibit similar traits. According to CII, partnering is a valid business strategy, but it cannot fit every situation. Partnering requires a shift in corporate culture, a "paradigm shift", to a more open and trusting relationship with suppliers, customers and even competitors. Figure 4.5, discussed earlier, illustrates some of the concerns that both owners and contractors have with adapting to a partnering approach. However, the preliminary results from existing partnering relationships show encouraging results. Unfortunately, the long term nature of the relationships prevents complete examination until the relationship has been in place for several years. Additionally, to use a colloquialism, the traits of partnering are like "mother and apple pie". This author believes that it would be difficult to make a case that use of the business practices required for partnering would do harm to a business relationship, or turn a successful project into an unsuccessful one.

CHAPTER V  
A SPECIFIC APPROACH

CORPS OF ENGINEERS

The United States Army Corps of Engineers [COE] began an experiment with partnering in 1988 with the construction of a replacement of the William B. Oliver Lock and Dam at Tuscaloosa, Alabama. [Dupes, 1989] The contract for the construction project had already been awarded when the COE decided to try the partnering approach. This "after award" partnering differs from the "standard" partnering approach of selecting a partner. In the Oliver project, the COE proposed that "partnering" be used and the contractor, Fru-Con Construction, accepted. The partnering process involved an initial team building workshop among all project personnel with subsequent follow up workshops. Although the Oliver Lock and Dam project has not been completed, reports have been encouraging of the partnering relationship. Partially as a result of the success with the Oliver project, the Corps of Engineers developed a Partnering guide for construction projects. This guide is shown in Appendix C. Attachment B of the guide lists suggested ideas for the

initial and follow on partnering workshop. Attachment C of the guide contains a description of the Oliver Lock and Dam project and of the partnering relationship.

The steps necessary to implement the COE type of partnering relationship are summarized as follows:

1. Begin Early.
2. Obtain Commitment from Top Management.
3. Identify a "Sponsor" or "Champion".
4. Select Participants
5. Select Facilitators
6. Schedule Initial Workshop.
7. Conduct Workshop.
8. Follow-up.

The partnering guide developed by COE describes a specific form of partnering different from earlier examples in this report. The guide is intended to help implement a partnering relationship for a single construction contract by use of a facilitator and workshop of team building exercises. "The process provides a structured environment for developing the cooperative attitude and commitment needed to drive the Partnership" [Mobile District, US Army Corps of Engineers, 1990]

The Corps of Engineers Partnering Guide sums up partnering as:

". . . partnering is an attitude, not necessarily a sophisticated process. The concept can be applied on a low cost basis. The agreement between the parties and the commitment to open communications and trust are the necessary ingredients. This can be accomplished in the simplest sense as a personal commitment between . . . (both parties)." [COE Partnering Guide, 1990]

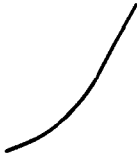
## U.S. NAVY

The Naval Facilities Engineering Command (NAVFAC) has used a process for many years which can to some extent be called partnering; open ended engineering service contracts.

Each Naval installation generally requires engineering services for several projects during the course of the year. These projects vary from large, congressionally mandated military construction projects to small planning evaluations and reports. As it is not practical to keep an in-house staff with the expertise to tackle all of these projects, the Navy contracts for most of the work.

The large projects are generally contracted for singularly with competition based on a quality review and a negotiation on price with the successful Architect and Engineering (A/E) firm. However, most bases contract for a single A/E firm or a few A/E firms in different specialty areas to handle all engineering services for a specified period of time (typically a year).

The successful A/E firm can generally be assured of getting all the engineering work required by the base although there is no guarantee of a particular level of work. Each requirement for engineering services is separately negotiated with the A/E firm. In theory, this should encourage the A/E to develop staffing and procedures



to specifically provide a for the installation's needs. Although the short term of the contract does not fit the partnering model, many similarities are evident. However, the specific commitment for a long term relationship is not considered strong enough for a true partnership.

Southern Division, Naval Facilities Engineering Command is currently experimenting with another form of partnering for construction projects. This form of partnering is similar to that developed by the U.S. Army Corps of Engineers. The data for this section is primarily lecture notes and slides from a briefing to Southern Division Naval Facilities Engineering Command (SOUTHDIV) project managers, given by Harry Zimmerman, Bob Green, and Bill Quade of the Naval Facilities Engineering Command Headquarters (NAVFAC) of 16 April 1991.

As part of the Defense Management Review of 1990, the Military Construction group examined the procurement procedures of the Naval Facility Engineering Command. The final report listed several areas where greater efficiency could be achieved in the construction procurement process. Twelve of these areas are currently being implemented. (see table 5.1) One of the areas is partnering.

The Naval Facilities Engineering Command defines partnering narrowly and is developing a specific contracting arrangement, different from those discussed earlier.

Figure 5.1

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**Defense Management Review  
Construction Efficiency Improvement Topics**

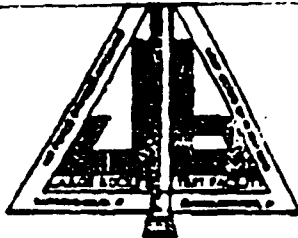
1. Parametric Estimating
  2. Claims Management
  3. Small Project Strategies
  4. Design/Build Contracts
  5. Evaluation of Total Cost Bid Strategy
  6. Request for Proposal Improvements
  7. Packaging Design and Construction
  8. Outstanding Contractor Program
  9. Constructability
  10. Partnering
  11. Value Engineering
  12. Warranty Programs
- 
-



Partnering in this sense is described simply as a team building effort between the construction agent, owner, and designer. The model developed by the US Army Corps of Engineers (Appendix C) is used as a guide for the partnering arrangement.

However, instead of a long term commitment between partners, NAVFAC intends to implement a partnering concept for complex construction projects after award by using a third party facilitator to develop the partnering themes.

The partnering effort uses behavioral science techniques to overcome interpersonal and institutional barriers through use of a workshop with key members of the partnering team. The workshop is intended to be 2 to 3 days in length. The attributes developed in the workshop are the familiar attributes of partnering discussed in earlier chapters. "The shared goals developed in the partnering retreat are specified in a formal, signed agreement and typically include safety, quality, schedule, changes, disputes, etc. (See figure 5.2)



# THE PARTNERING AGREEMENT OF THE J-6 TEAM FOR THE LARGE ROCKET TEST FACILITY ARNOLD AFB, TN

- I. We, the J-6 Team, are committed to a positive utilization of PARTNERING in the construction and contract administration of this project. We believe that through PARTNERING we will be able to provide a safe, quality, functional project completed on time and within budget.
- II. We are committed to open communications, joint problem solving, and teamwork to accomplish the following goals:
  - A satisfied customer with a quality facility which works.
  - A safe project with zero lost-time accidents.
  - Successful project completion which includes:
    - -- Contract cost growth limited to 2%
    - -- Award 100% of the Award Fee
    - -- Completion within respective budgets
    - -- Maximizing Value Engineering
    - -- Completion on or ahead of schedule
  - Total team approach resulting in Outstanding Project Team Performance.
- III. Our goals will be achieved through a commitment to teamwork and partnering characterized by mutual trust, responsiveness, flexibility and open communication. To accomplish these goals, we, the J-6 Team, commit to project decision-making at the lowest possible level within the Team at the project site.

*[Handwritten signatures and notes covering the text area, including names like Michael A. Allen, Gary A. Cannon, Frank Cantrell, Richard L. Hester, and others.]*

U.S. ARMY CORPS OF ENGINEERS

EBASCO Constructors, Inc.

CE. Services, Inc.

The Ralph M. Parsons Co.

U.S. AIR FORCE SYSTEMS COMMAND

Gust K. Newberg Construction, Co.

DMJM

ATTACHMENT (A)

NAVFAC intends to use this approach on large, complex, or critical projects with tight completion schedules. Current projects using or scheduled to use the partnering approach are:

\$112M Naval Investigative Command HQ, Suitland MD.

\$160M Naval Hospital, Portsmouth, VA.

\$38M Drydock Modernization, Portsmouth, NH.

\$25M Propulsion Training Facility, Charleston, SC.

Expected results from the partnering arrangement include:

- Timely problem identification and resolution
- Improved Communication,
- Improved construction quality
- Improved scheduling
- Timely submittal processing
- Improved subcontractor relations
- Minimization of project cost growth

The team work approach is jump-started with a workshop prior to start of construction. Comments from an observer of one of the workshops are illustrative:

"The partnering session was conducted by Bledsoe and Boyd, P.C., Management Psychologists. Participants included Army Corps of Engineers, Air Force Systems Command, Newberg-Ebasso (Prime Construction Contract Joint Venture), various major subcontractors, and the A/E. The first day and a half was devoted to "human behavior"

sessions including psychological profiles of team members and team building exercises. The last day and a half was devoted to joint examinations of Government/contractor administration problems specific to the project. A healthy examination of invoicing, shop submittal, Buy American Act, request for information, and other contract administration procedures transpired. The project is a \$180 million dollar Large Rocket Test Facility to be constructed on a "virgin" site at Arnold Air Force Base, Tennessee. Although I was turned off by the first day and a half, the advantage of attacking anticipated problems well in advance of critical path activities in a nonthreatening, nonadversarial atmosphere came through loud and clear. Although the "touchy-feely" stuff seemed unnecessary at first, it clearly was an expedient method to cut through negative attitudes and facilitate timely communication and teamwork."

The partnering agreement that resulted from this particular workshop is shown as figure 5.2.

The partnering clause for NAVFAC construction contracts reads as follows:

"In order to most effectively accomplish this contract, the Government proposes to form a cohesive partnership with the Contractor and its subcontractors. This partnership would strive to draw on the strengths of each organization an effort to achieve a quality project done right the first, within budget and on schedule. This partnership would be bilateral in make-up and participation will be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by both parties and will be shared equally with no change in contract price."

It is noted that in some cases, partnering was started after the construction contract was awarded, thus the above clause was not included in the contract. In those cases

where the parties agreed to partnering, the same positive results were observed.

Start up costs for the partnering retreat are three to ten thousand dollars per contract. This relatively low dollar investment yields a high potential for payback. In this current approach, a contractor is not strictly selected as a partner, rather the existing contractor is grown into a partner for the instant contract. As one of the SOUTHDIV project managers described the expected results "The partnering process teaches us management techniques that are second nature to many people. Partnering will not guarantee a successful project, but it should open up honest and direct lines of communication and will certainly not make the project any worse." [Black, 1991]

## CHAPTER VI

### POTENTIAL APPLICATIONS

As seen in the Shell and Du Pont examples (p. 26-32), partnering relationships are being used and have great potential for A/E and Construction Contractor relationships with owners. Appendix A shows several examples of both A/E and Construction Contractor partners. This type of relationship could be easily expanded throughout the construction industry whenever products or services of a recurring or similar nature are required over a long term time period. A/E's and Prime contractors can partner with owners and apply this technique directly. The partnering relationship described in Chapter III between Du Pont and MK Ferguson is an excellent example of an application of A/E - Owner partnering. The commitment of dedicated personnel to the Du Pont projects allows for the work to be performed almost as if it were done in-house by Du Pont, but without the overhead requirement to maintain the staff and state of the art expertise.

However, since a large portion of construction work is for a one time service, partnering (long term partnering) as used by Shell and others, is not applicable.

The DOD approach is available to be implemented for single projects of this type. The "jumpstart approach" uses the partnering principals discussed here without a need for the parties to partner for a long term relationship. As discussed earlier, the full benefits of a partnering relationship may not be realized but the team building approach should not lessen the success of the project. The cost in commitment, time, and resources must be examined.

Is partnering worthwhile for a single project? It appears so. The results from the Oliver Lock and Dam, and the Operational Control Center indicate a successful project. The investment in the workshop and follow up sessions is small when compared to the total cost in the project and the projected rewards from minimizing conflicts. Partnering appears to be especially beneficial for complex projects where close coordination between contractor and owner - A/E is required.

As discussed earlier, partnering is being practiced within the engineering community for long term engineering service relationships although the term partnering is not necessarily used. The team building approach illustrated by partnering is a key element in many A/E - owner relationships. Renewed concentration on these principles can only be beneficial. This beneficial relationship is true for one time partners as well as long term partnerships.

For the prime contractor and subcontractor, implementation of partnering may not have as wide spread and application. The prime contractor and subcontractor relationship generally does not require a long term commitment and preselecting the sub for partnering would tend to circumvent competition in the bidding process. Additionally, the prime contractor generally does not have much control over the scope of the work to be accomplished. The ability to resolve conflicts in the construction process is highly dependent on the owner. It is generally the owner and prime relationship where the problems are resolved and the solution is dictated to the subcontractor. (Although the subcontractor may well have important input in the problem resolution, he is generally directed by the prime contractor.)

Any relationship which can benefit from the characteristics of partnering:

- mutual risk
- long term commitment
- shared risk, reward, responsibility, and goals, can be a candidate for partnering in some form, especially if one's view of partnering is on the characteristics and commitment required of the relationship rather than on the contractual form of the relationship. In summary, long term partnering techniques are suitable for widespread use for A/E - Owner and Prime Contractor - Owner relationships where



a succession of similar products are required.

Alternatively, the DOD "jumpstart" approach is applicable to Owner - Prime contractor relationships for a single project. Partnering techniques can also be applied to A/E - Owner relationships although it is felt that the nature of the A/E relationship is already based on a team approach to produce the design with the owners requirements and input.

A subcontractor may develop a long term relationship with a particular prime contractor, and this may be defined as partnering when both anticipate a commitment of work and a commitment to level of service. However, if the prime obtains business by competitive bid, it may be difficult for both parties to commit as required by partnering since the long term workload is not guaranteed. Long term partnering requires enough work and enough staff to make a real commitment to another partner. If a small contractor or A/E attempts to partner, he may expend all of his resources in that relationship and may not derive enough benefits from that relationship to stay profitable. The organization should multiple partners or commitments for work, otherwise growth is wholly dependent on the single partner. As stated in the Ford example, "different objectives can be pursued with different partners." [Stralkowski and Billon, 1988]

## CHAPTER VII

### CONCLUSION

To some, the characteristics of partnering are nothing more than the normal business practices that go into providing a superior service or product. As shown in the North Carolina example, the engineering firm simply provided what was thought of as "good service" and was rewarded by a long term business relationship. The attributes of partnering such as trust, commitment and mutual risk sharing are difficult to contract for. In many instances, they are the day to day business practices of the firm. Otherwise, implementation can be difficult.

Partnering makes perfect sense in cases where a specialty product is required over a long period but the relatively small amount of the product required or the technological expertise required to produce the product is such that it is not economically feasible for the parent company to produce the product in house. A long term relationship between an owner and engineer or an owner with a repetitive need for construction and a contractor are

examples. The long term approach of traditional partnering relationships makes it impractical for the majority of owner/engineer/contractor relationships since the requirements are of a one time nature. In this atmosphere, none of the parties can afford the expense of matching their corporate practices to those of the other party for one project and remain competitive on cost. However, the "jumpstart" approach now being used by the Department of Defense appears to be extraordinarily successful for one time construction projects (although there is no data to support that the projects would have been unsuccessful without a partnering relationship). Additionally, one may easily take the position that for those applications where partnering makes sense, the attributes of partnering become a rather obvious business practice for producing a superior product and developing a long term business relationship. In other words, if a partnering relationship is applicable, a smart businessman will recognize the benefits of that relationship and the strategy required to develop that relationship whether or not he is familiar with the buzz words of partnering.

The Corps of Engineers Partnering Guide provides an easily followed procedure for implementing Partnering for a

single construction contract. The method appears successful and worthwhile, even if it accomplishes nothing more than starting the contract off on a good foundation of open communication, mutual trust, and a common commitment to the success of the project.

## RECOMMENDATIONS FOR FURTHER STUDY

As a partnering relationship is long term, very little data is currently available on the current construction relationships. Future study should focus on a critical review of the results of each of the relationships presented here. Additionally, an analysis should be attempted to quantify the cost savings or increased profitability from partnering. Finally, a study should be conducted to determine which types of construction projects in terms of complexity or dollar value can benefit from a partnering relationship (especially the one time partner approach used by the Department of Defense). In particular, three questions should be addressed in future research of expanding the use of partnering:

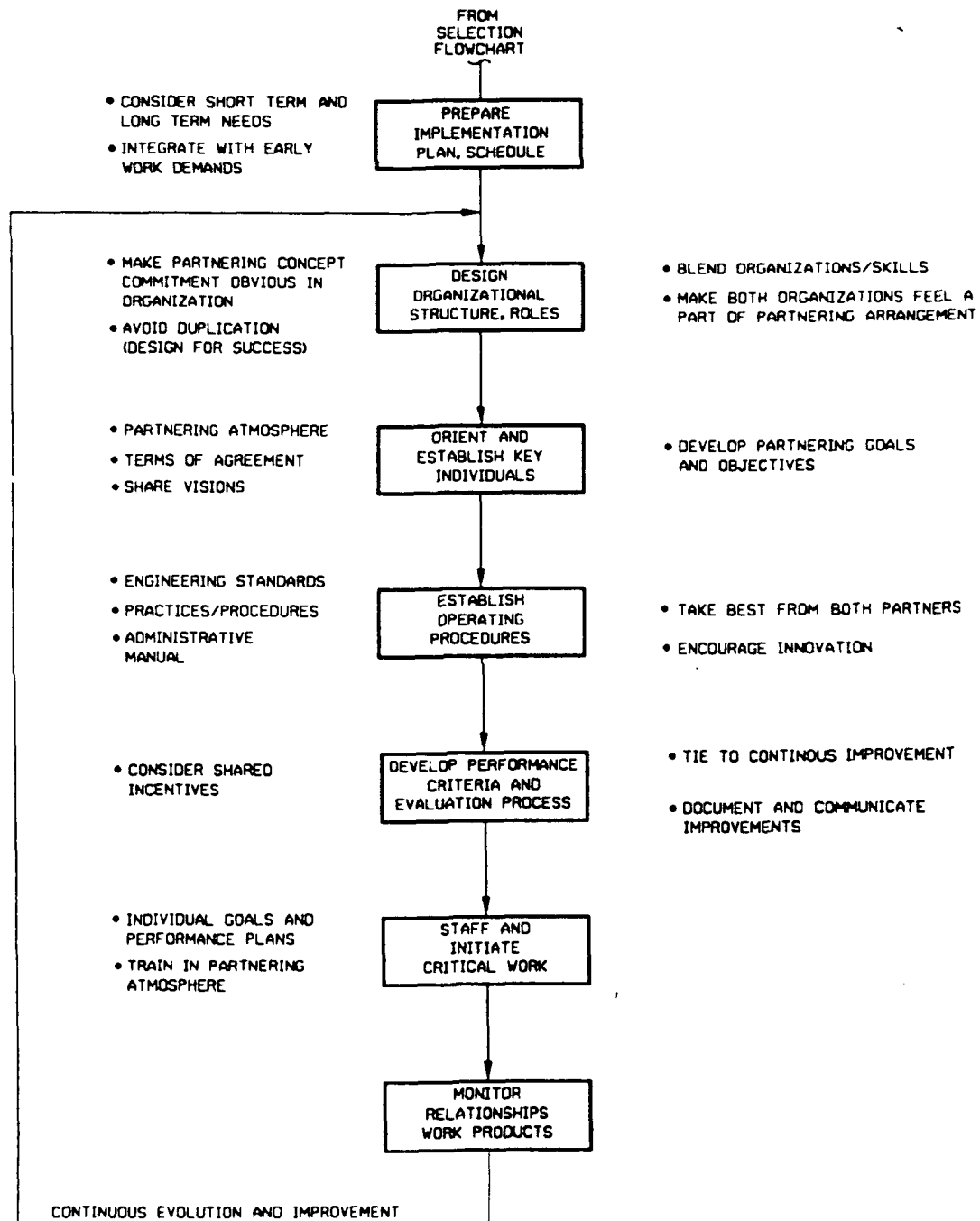
1. Is there a point of diminishing returns in which the cost of implementing partnering outweighs the benefits?
2. When using the one time partner approach, should successful partners be awarded future contracts?
3. Should completion of a partnering work shop be a prequalification for bidding on certain critical projects?
4. Should the partnering workshop become a standard item in contracts for the purpose of building teamwork between the parties involved?

APPENDIX A

GUIDELINES FOR IMPLEMENTING PARTNERING

**Figure 4**

**PARTNER IMPLEMENTATION PROCESS  
MODEL FLOWCHART**



## APPENDIX B

### EXISTING PARTNERING RELATIONSHIPS



## EXISTING PARTNERING RELATIONSHIPS

Owner U.S. Army Corps of Engineers

Partner Fru-Con Construction Company

Date: Started in April 1988

Purpose: Construction of the \$70 million replacement of the William B. Oliver Lock and Dam, Tuscaloosa, Alabama.

Results: Positive impact on project relations and problem solving.

Owner U. S. Army Corps of Engineers (U.S. Air Force)

Partner W & J Construction Company (General Contractor)

Partner: Harris, Inc. (Instrumentation Contractor)

Date: Started in February 1989

Purpose: Construction and activation of the \$6.4 million TOCC Project at Cape Canaveral, Florida.

Results: Remarkable improvement in attitudes of parties involved.

Owner Chevron Corporation

Partner Bechtel, Inc. (and all affiliates)

Date: Started in April 1989

Purpose: A master agreement for the supply of engineering, procurement, and construction management services for Chevron projects.

Separate contracts will be used for specific projects and Bechtel affiliates.

Results: At this time the alliance has utilized the engineering services portion of the agreement only.

Owner Shell Oil Company

Partner Bechtel, Inc.

Date: Started in 1987

Purpose: Bechtel is performing engineering, procurement, construction management, and related services for Shell under Shell's Minimum Shell Involvement (MSI) Program. This allows Shell to concentrate its technical resources on the production of its products.

Results: The program involves work at a number of Shell Oil's facilities. Both companies feel they benefit from the improved quality of the work performed and the reduction of the cost of services that result form a process of continuous improvement over time.

Owner Great Northern Nekoosa Corporation

Partner RUST International Corporation

Date: Started November 1988

Purpose: RUST will perform conceptual studies, engineering, procurement, and construction of projects for GNN's capital program for the next three to five years for five of the six GNN divisions.

Results: RUST is already performing work under the agreement at several mill sites. GNN has transferred one coordinator to RUST's Birmingham headquarters, where 135 personnel are now employed for the arrangement with a projected total of 300 personnel required.

Owner Union Carbide Chemical and Plastics Group

Partner Bechtel, Inc.

Date: Started in April 1988

Purpose: Bechtel will provide engineering, procurement, and construction services with expansion to include process engineering and operations support. Union Carbide's cycling workload had made in-house engineering and the use of multiple contractors inefficient.

Results: UCC feels the partnering arrangement with Bechtel is providing significant benefits and Bechtel will be able to provide more cost-effective services with a stabilized workload.

Owner Shell Oil Company

Partner S.I.P. Engineering, Inc.

Date: Started in 1984

Purpose: S.I.P. is providing engineering, design, procurement, and construction management of refining and petrochemical facilities for Shell. This allows Shell to meet its strategic plan and reduce the demands on Shell staff.

Results: Projects are under way at several different Shell locations, with primary Shell interfaces and SIP's design work done from Houston. S.I.P. provides increased flexibility and responsiveness for Shell on its project work.

Owner E.I. Du Pont de Nemours

Partner Fluor Daniel

Date: Started in 1986

Purpose: Fluor Daniel is providing engineering, design, procurement, and construction management services to Du Pont for selected projects. Du Pont entered into the agreement to obtain higher quality services and improved safety for its projects from a select supplier, while being able to reduce the fixed resource requirements of doing the work in-house.

Results: Both parties are quite pleased with the relationship to date and are working on several projects. Du Pont has a team of employees assigned to Fluor Daniel's offices in Greenville, South Carolina, for day-to-day coordination.

Owner Proctor and Gamble

Partner BGP Inc.

Date: Started in 1986

Purpose: Provide engineering and purchasing services predominantly for the Diaper Category.

Results: Reduced cost of engineering and higher quality engineering packages resulting in fewer field changes and less field rework. Making internal resources available for work which they are uniquely qualified to do.

Owner Proctor and Gamble

Partner The M. W. Kellogg Company

Date: Started in 1986

Purpose: Provide engineering, purchasing and construction services for the PS&D Category.

Results: Higher quality engineering packages resulting in fewer field changes and less field rework. Making internal technical resources available for work which they are uniquely qualified to do.

Owner Proctor and Gamble

Partner Fluor Daniel

Date: Started in 1986

Purpose: Provide engineering, purchasing, and construction services for the Bar Soap & Household Cleaning Products Division. The partnering team's mission is to creatively develop and deliver manufacturing systems and facilities such that both companies are provided with a sustainable competitive advantage.

Results: Continual improvement in the quality of engineering and field support. Making internal technical resources available for work which they are uniquely qualified to do.

Owner E. I. Du Pont de Nemours

Partner MK-Ferguson

Date: Started June 1987

Purpose: MK-Ferguson is providing engineering design, procurement, and construction services on various projects. Du Pont entered into the agreement to provide continuous in their EPC process and institute additional flexibility in resource utilization.

Results: Projects are in various phases of completion at several domestic sites with plans for future foreign sites. Both partners are pleased with results to date. Du Pont has team of three resident coordinators in MKF's Cleveland office in addition to other part-time project staff.

Owner E. I. Du Pont de Nemours

Partner Day Engineering (Small Projects)

Date: Started in 1988

Purpose: Project groups of several plants were reorganized in a central location and augmented by the contracting organization for improved effectiveness and reduced use of in-house resources in implement (<\$2MM) Small projects.

Results: Desired goals were achieved by the partner. The concept has spread to more plants in several other parts of the country.

Owner Alcan Rolled Products

Partner Fluor Daniel

Date: Started 1988

Purpose: Alcan selected Fluor Daniel to bring its expertise to create a highly skilled team of project and process engineers to improve Alcan's engineering and total project quality. The combined team will provide comprehensive manpower leveling and change most of Alcan's fixed project costs to variable costs.

Results: The partnership is growing rapidly and is progressing beyond original expectations. The current projects being executed include the Terre Haute widefoil mill plant and the new slitter line at the Oswego, New York, plant. Fluor Daniel is also providing conceptual design for several major projects that are in varying developmental stages.

## **APPENDIX C**

### **CORPS OF ENGINEERS PARTNERING GUIDE**

# **A Guide to Partnering for Construction Projects**

**A Process for  
Implementation**



**US Army Corps  
of Engineers**  
Mobile District

**JANUARY 1990**



# A Guide to Partnering for Construction Projects

## Introduction

Partnering is an attitude. It is a way of doing business with a contractor or customer that recognizes that we have common goals which can be achieved through cooperation and open communications. The word may be new, but the concept is not. We have always practiced it, but now we have given it a name and a structure in order to more effectively execute projects.

The primary advantage of Partnering is that it recognizes the goals of all parties to create a synergism of effort. We in the Government have goals of completing quality projects, safely, on time, and within budget. The contractor wants to maximize his profit and satisfy his customer to enhance future business opportunities. The customer wants a quality product as quickly as possible, and at minimal cost to him. These are not conflicting goals. There is a strong commonality among them, and the Partnering process provides the vehicle for enhancing the similarities and cooperatively working to accomplish our common goals.

The Partnership is established through a facilitated process, normally consisting of organized workshops to bring the participants together. The process provides a structured environment for developing the cooperative attitude and commitment needed to drive the Partnership. This paper is a guide for establishing a process between the Corps of Engineers (or owner) and a Contractor for a construction project.

## Application

When should Partnering be used? Is it applicable to all construction projects? Are there any guidelines for when to use the process? Are there threshold project costs that define a need for Partnering? These are some of the most commonly asked questions about Partnering.

There are no definitive answers. Because of the up-front commitments and costs associated with a formal Partnership, its application is probably more appropriate for projects which are large, complex, sensitive, or have considerable risks associated with their timely completion. However, as discussed later in this paper, the concept can be adapted for smaller projects.

## Procedure

The following is a suggested step-by-step process which serves as a guide for the establishment of a Partnership. It is only a guide. In individual cases, all steps may not be required, and modified versions of others may be more appropriate. Therefore, the process should be considered very flexible.



1. Begin Early. If Partnering is to be used, the decision should be made as early as possible, and the process begun before contract award. In the solicitation for bids, a general statement of intent is helpful. Typical wording may be as follows:

"In order to most effectively accomplish this contract, the Government proposes to form a cohesive partnership with the Contractor and its subcontractors. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget and on schedule. This partnership would be bilateral in make-up and participation will be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by both parties and will be shared equally with no change in contract price."

The key essential concepts in the statement are "voluntary" and "cost sharing". It should be a process that both parties want and for which both are willing to pay.

2. Obtain Commitment from Top Management. Because of the additional efforts and up-front costs required for Partnering, top levels of management in both organizations (Corps and Contractor) must be fully committed to the concept and process. Without the commitment and active support of management, the process will have less chance of success. The commitment should be from the top down. The CEO's of both organizations (the District Engineer in the case of the Corps of Engineers) should be approached with an explanation of the advantages of Partnering and their open support should be assured.

3. Identify a "Sponsor" or "Champion". No matter how committed management and the participants are, the Partnership will not run itself. In order to track, care for, and feed the process, one individual must assume the responsibility for it. This person must provide the moral, administrative, and logistical support that will be required to make it work. In the Mobile District, the Life Cycle Project Manager has the responsibility for the initiation, development, nurturing, and maintenance of the Partnering process. Since Partnering promotes the same goals that are of paramount interest to the project manager - quality, schedule, and cost - he is a logical choice for champion.

4. Select Participants. Who should constitute the Partnering team? The answer will vary from project to project, but there are some guidelines. First of all, the Corps' Area or Resident Engineer, his counterpart with the Contractor, and their assistants should form the nucleus. The size of the project should dictate who else on their staffs should participate. Management representatives of both organizations should also be a part of the team. Personnel in the District Office should also be considered, since design changes will occur during construction. Care should be exercised in maintaining a balance. If the team were "loaded" with Corps personnel, the contractor might feel outnumbered and not perceive his role as being equal. The total number should be considered, also. The size of the team should remain as small as possible to facilitate teamwork. The larger the group, the less efficient it becomes.

5. Select Facilitators. Teamwork, trust, and communication are needed to sustain the process, and specific, facilitated workshops are recommended to build these qualities. A facilitated workshop is one conducted by an individual who is not part of the technical or management portion of the group, but is a third party, objective participant, skilled in teambuilding and group dynamics, who has no vested interest in the decisions reached by the group. The facilitator manages the process of the meetings - not what is decided, but how these decisions are made. A facilitator must be reasonably neutral on the subject under discussion and his or her goal should be only to reach a consensus among the team. Due to the intensive nature of Partnering workshops, more than one facilitator may be advisable.

The selection of a facilitator is an important one. There are several firms which have some knowledge and experience in facilitating Partnering workshops. A list of those experienced facilitators is included as Attachment A to this paper.

Geography, availability, or cost may dictate the use of facilitators without specific Partnering experience. There are many firms and individuals available throughout the country with the necessary skills for facilitating Partnering workshops. The primary skills needed for facilitating a Partnering team are in the areas of Management Training, Communications, and Organizational Development. A check with the Business School at a local university may be profitable. Additionally, Corps Training Officers and Planning Divisions generally deal with these types of individuals on a regular basis, and may know of a person or firm which could provide the service.

Remember that all costs are to be shared by both parties. More information on specific costs is included later in this paper.

6. Schedule Initial Workshop. In order to set the tone for the project working relationships, the Partnership should begin immediately. The initial workshop should be scheduled as soon as possible after contract award. It should be of several days duration and be conducted at a location away from the project site or the offices of the participants. Experience has shown that four days provide adequate time for accomplishing the goals of the workshop without unduly pressuring the participants. A "retreat" atmosphere away from the workplace fosters the group dynamics which must occur.

7. Conduct Workshop. To properly initiate the Partnership, an initial facilitated workshop should be planned and conducted. The facilitators should make heavy use of group dynamics techniques such as the Nominal Group Process, throughout the life of the Partnership. Attachment B is an outline of suggested activities that could be performed at this initial workshop.

8. Follow-up. A detailed maintenance plan should be identified in the implementation stage. Follow-up sessions should be planned to reinforce team building skills and to assess the progress of the Partnership. These follow-up activities are vital. The initial workshop focuses on changing the attitudes of the participants from the traditional "us" and "them" to the team-spirited "we"; the lessons need periodic reinforcement. The more time that passes, the more human nature tends to bring back old habits and attitudes. An occasional one- or two- day periodic refresher will significantly boost the spirit of the Partnership. The frequency depends upon the individual personalities and circumstances. Be



flexible. If the plan is not working as well as it could, change it. Schedule the follow-up more or less frequently than planned as circumstances dictate.

### Cost

What does Partnering cost? The complete answer is dependent on several variables, including size of the team and distances between the project site, the Corps' District office, and the contractor's home office. The cost of facilitators is probably the greatest visible cost, and can vary depending on the number of facilitators and their geographic location. The major cost components are discussed below.

1. Facilitators. The cost of facilitators will vary from one firm to another, but will probably be over \$1,000 per person per day, including planning and preparation time. If the facilitators are local, coordination will be easier, but if they are located elsewhere, travel and per diem will add to the cost. For an initial four-day workshop, including preparation, a good planning estimate would be \$6-10,000. Likewise, two-day follow-up sessions should cost \$3-5,000.
2. Labor. The cost of both Corps and contractor personnel should not be overlooked. It costs both organizations to have key people intensively involved in such an effort. This cost can be estimated by knowing who should be involved and consider the cost of their time for the duration of the workshops plus travel time, if any.
3. Meeting Facilities. Renting hotel conference rooms is the most practical, given the fact that all participants should be away from their offices and the job site. Typical conference facilities cost in the \$50-100 per day range. You may want a second room for the team to subdivide into smaller working groups for specific exercises. Some creativity in locating the sessions could reduce this cost.
4. Supplies. Don't forget that you need at least two flip charts with lots of paper, markers, and tape. Many hotels can provide these with the meeting rooms at no additional cost.
5. Travel. Travel and per diem expenses for participants to attend workshops are costs that can be easily estimated.
6. Administrative. The "champion's" time for logistical planning, coordination, mailings, and follow-up activities needs to be considered. The Partnership does not run itself. Some effort is required. Consider at least 2-3 days preparation and follow-up plus several days between sessions for maintenance activities.
7. Lost Productivity. In addition to direct labor costs, the Partnering efforts will take manpower and brainpower away from other efforts. This is especially crucial to the contractor since it requires his key personnel to be away from the job site periodically.

8. Perks. To instill and maintain the "team" feeling, consider the inclusion of coffee and refreshments at the workshops and possibly some keepsake items, such as coffee mugs or note pads with the team's logo (which could be developed at the initial workshop). The keepsakes could be provided at each workshop to make the participants feel they belong to something special. It's a nice and inexpensive extra that adds to team spirit. Caution: be sure to stay within the limits of regulations governing contracting and conflict of interest.

### Examples

There are two specific projects in the Mobile District where Partnering has been successfully used. They are the Oliver Lock and Dam replacement at Tuscaloosa, Alabama and the Test Operation Control Center (TOCC) at Cape Canaveral, Florida. Attachments C and D summarize how the Partnering concept is being applied at each.

### Shortcut for Smaller Projects

Everything discussed thus far has centered on large, complex projects, where the cost of Partnering would be insignificant compared to the project cost. How can the process be adapted for small projects? The concept is too good to be applied only to the big ones.

Remember that Partnering is an attitude, not necessarily a sophisticated process. The concept can be applied on a low cost basis. The agreement between the parties and the commitment to open communications and trust are the necessary ingredients. This can be accomplished in the simplest sense as a personal commitment between the Corps' Resident Engineer and the contractor's superintendent.

As an extension of that commitment, these individuals could expand the commitment to their staffs. A mini-initial workshop of a day or less could be conducted on-site without trained facilitators in a structured atmosphere. If the informal group can identify goals, develop a plan to achieve them, and draw up a "document" to commit to the goals, then a Partnership would have been implemented. It's not anything magic, just common sense.

### Other Applications

Although not yet tried, design contracts with Architect-Engineer (A-E) firms could also lend themselves to the principles of Partnering. The process will soon be applied to A-E contracts in the Mobile District, and the expectation is very positive. We also believe that the inclusion of the non-Federal cost-sharing sponsor will be very beneficial in future Civil Works projects.

### Summary

Partnering is not magic or mysterious; it is not new, and it is not a quick fix. It is common sense and it is successful. The steps outlined in this paper have been proven to work in the examples stated, but they should not be taken as "gospel". Each contract and each team will form their own creative and unique processes for achieving mutually successful Partnerships. Good luck!



## ATTACHMENT A

Facilitators  
With Partnering Knowledge or Experience

Synergistic Consulting Group  
6 Schwammle Drive  
Mobile, Alabama 36608

POC:  
Dr. Don Mosley (205)344-2337  
Dr. Carl Moore (205)460-6418

Bleke & Boyd  
3400 Peachtree Road  
Atlanta, Georgia 30326

POC:  
Dr. Brian Bienn (404)266-9368

Hay Systems  
12424 Research Parkway  
Suite 250  
Orlando, Florida 32826

POC:  
Ms. Viki Bowen (407)281-1747

Organizational Dynamics, Inc.  
5605 Glenridge Drive  
Suite 650  
Atlanta, Georgia 30342

POC:  
Mr. Dick Kubow (404)256-4115

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## ATTACHMENT B

### Suggested Activities for Initial Partnering Workshop

The goals of the workshop are to open communications, develop a team spirit, establish Partnering goals, develop a plan to achieve them, and gain commitment to the plan. There are a number of processes which could be used to accomplish the workshop goals. The following are only suggested steps for the process. Neither the specific exercises nor the sequence are critical. Be flexible and creative. Your ideas and your facilitators suggestions should be incorporated into your process.

1. Strengthen interpersonal communications with exercises such as Active Listening / Congruent Sending or other communications skill building techniques.
2. A self examination exercise, such as the utilization and discussion of the Myers-Briggs Type Indicator survey would be appropriate as the next effort.
3. Develop teamwork with specific teambuilding exercises. One way to start is to perform some "ice breaker" exercises for the participants to get to know one another. It is very important that the individuals understand group dynamics. Exercises where the participants solve problems as individuals and then as groups are excellent for achieving this.
4. Team exercises are important to get the individuals to start thinking and working as a team. Specially designed exercises that contrast competition and cooperation are useful at this point. Note: For these exercises and all during the workshop, the participants can be divided into smaller working groups with different combinations of Corps-Contractor and field-office personnel.
5. Define strengths & weaknesses from prior projects. The Corps personnel and the Contractor personnel should work independently to list strengths and problems they perceive from previous jobs. Then, together they can analyze these lists and develop a list of possible problems they might face during the course of the contract. This lets them start thinking in terms of project-specific issues that they will be dealing with as a team.
6. Provide instruction on conflict management techniques. If time permits, include some exercises to reinforce the training. It is important for the team members to understand the difference between "positions" and "interests" or "values", and how to negotiate based on interests.
7. Develop a problem solving strategy or methodology for the team to use. The facilitators can provide an instructional session on problem solving and the team can choose to use it or modify it or develop their own. The process will then be used by the team throughout the project to deal with problems as they arise.
8. Develop trial solutions using the selected problem solving process and the list of potential problems outlined in Step 5. The trial solutions may only be conceptual at this point, but they will serve to reinforce the team approach to solving real life project problems and disputes.
9. Define Partnership goals. As an individual exercise, or if the participants are "exercised out", as a group, develop a realistic set of goals for the Partnership.
10. Execute an agreement. Using the goals developed above as a base, draw up an actual agreement for the members to sign to express their commitment. After the workshop, as a strong signal of support, have the CEO's of each organization also sign the agreement and freely distribute copies of the final document to all members. Examples of such agreements for the Oliver Lock and Dam and the Test Operation Control Center within the Mobile District are included as Attachment E.
11. Develop an implementation plan. This is probably the most important step of the entire process. Without a realistic working plan, the goals and ideals fostered at the workshop will tend to fade with time. A plan is needed to make the Partnership a living and breathing entity. Checkpoints and follow-up workshops, combined with the energy of the champion previously identified will ensure its health.

## ATTACHMENT C

Example  
Application of Partnering  
at  
the Oliver Lock and Dam Replacement

A \$110 million replacement lock and dam is being constructed to eliminate a severe construction on the busy Black Warrior-Tombigbee Waterway at Tuscaloosa, Alabama, caused by an old undersized lock. The new lock chamber will be 110 feet by 600 feet, with a 28 foot lift, and the dam will be 800 feet long and 45 feet high, located 2,800 feet downstream of the old one. The current contract is with FRU-CON Construction Corporation of Ballwin, Missouri for \$70 million to construct Phase II, the actual lock and dam construction. The waterway must remain open during construction, except for a three-week closure to transfer operation from the old lock to the new. The users of the waterway are very concerned about a timely opening of the new lock in the fall of 1991. Accordingly, there is considerable political interest in keeping the job on schedule.

The Notice to Proceed was provided to FRU-CON on 1 April 1988. Because the Partnering concept was only an idea before then, there was no clause in the bid documents alluding to Partnering. After bid opening, FRU-CON was approached with the suggestion of Partnering and they enthusiastically agreed. The initial workshop was immediately scheduled for 18-22 April, and thus the Government's first Partnership was begun.

To demonstrate management's commitment to this new concept, both the Corps' Mobile District Chief of Construction and FRU-CON's Vice President for Operations volunteered to be active team members. Field staff from both organizations were members, as well as design staff in the home offices. The complete initial make-up of the team is shown below:

### FRU-CON

Vice President  
Project Manager (site)  
Project Engineer (site)  
Quality Control Rep. (site)  
Chief, Proj. Spt. (home)  
Project Support (home)

### CORPS

Chief of Construction  
Resident Engineer  
Asst. Resident Engineer  
Office Engineer  
Structural Engineer (home)  
Geotechnical Engineer (home)  
Construction Prog. Mgr. (home)

Later additions included FRU-CON's schedule expert and the Corps' Life Cycle Project Manager (LCPM was established two months after the Partnership was initiated).

As part of the plan developed at the initial workshop, the team decided to conduct a follow-up workshop in August 1988, and every six months thereafter. These follow-up sessions are held in Birmingham, Alabama (about 60 miles from the project site) to avoid the interruptions associated with meeting too close to the site. The purpose of the follow-up workshops is to reinforce the attitudes and processes developed at the initial workshop. Experience has shown that actual project issues have become the dominant theme of the meetings - to such an extent that the facilitators have designed exercises that focus on real issues to be solved in the team settings. The follow-up workshops are necessary to keep the team members focused on the process. It has been observed that the more time that passes since the last workshop, the greater the tendency for people to begin to slip into their old habits.

At the first follow-up workshop, the site teams decided that they needed special emphasis on the project schedule. To provide that emphasis, they agreed that they should meet bi-weekly to sit back and take a look at the big picture. They actually met on a daily basis, but always about very specific issues and problems. Because of the press of these daily issues, however, the bi-weekly schedule meetings were not occurring. After this was realized, the LCPM Project Manager took on the role of "internal facilitator" and began driving to the project every two weeks to ensure their conduct. This has been a successful move and is proving to keep an emphasis on the schedule, as well as maintaining the spirit of the Partnership.

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The Corps and FRU-CON are equally sharing the Partnering costs. Each pays the facilitators on an alternating basis for the semi-annual workshops - the Corps, through an indefinite delivery order contract, and FRU-CON by direct billing. Originally, we split all the costs on an alternating basis. In order to provide coffee and refreshments at the sessions, we found that instead of paying all costs on an alternating basis, we would split the logistical costs at each session. Accordingly, the Corps pays the meeting room charges for all sessions, and the contractor handles the coffee and refreshments for each. The costs are very similar, and we are able to work in a professional atmosphere.

To further instill a feeling of belonging to the "team", we also provide team members little perks with the logo of the team imprinted on each. At the initial workshop, a team logo was developed to identify membership on the team as something special. The perks have consisted of portfolios, coffee cups, ice coolers, and nylon attaches.

Partnering does not ensure a lack of disputes, but it does provide a communications process for dealing with them. Several disputes, which may have resulted in claims, have been resolved informally through this process. One was not, however. A claim has been filed based on specification interpretations of foundation preparation requirements. Although Partnering did not resolve the dispute, the communication process resulted in a clear definition of the disagreement in an open non-adversarial atmosphere. We simply "agreed to disagree". Because of the Partnering commitment, and with FRU-CON's agreement, the Corps will quickly resolve the issue through an Alternative Dispute Resolution process, rather than fall back on the traditional lengthy and costly legal claim process through the courts.

The team has considered and refined concepts before FRU-CON has submitted proposals to ensure their rapid acceptance. Rather than FRU-CON spending time developing proposals and the Corps spending time reviewing them, efforts are now spent only on proposals that will be accepted. The wasteful process of developing and reviewing proposals which will be rejected has been eliminated.



## ATTACHMENT D

### Example Application of Partnering at Test Operation Control Center

Cape Canaveral Air Force Station, Florida, the launch site for the Nation's exploration of space, is the site of the Test Operation Control Center (TOCC). As part of the process of modernizing tracking stations and acquisition sensors, the TOCC will significantly reduce the turn-around time between launches and substantially reduce the possibility of launch delays due to instrumentation difficulties. For this reason and in order to meet the expanding missile and space vehicle test requirements of the 1990's, this facility is critical to both the Department of Defense and NASA programs.

The TOCC is a \$17 million project involving the construction of a facility for monitoring and controlling all rocket launches at the Cape. The 136,000 gross square foot center contains an observation deck, utility building housing, an instrumentation area, and a very comprehensive interior design to enhance the utility of the facility. The construction includes a complex HVAC system for environmental control which is critical to the \$60 million worth of instrumentation equipment to occupy the facility.

The TOCC was targeted for Partnering during its design. Members of the partnering team represent the three areas of interest in the project - the contractor, the user, and the Corps. The construction contractor is W&J Construction, who is part of the Partnering team along with the instrumentation contractor, Harris Corporation. The user, the Air Force, is represented by the Air Force Regional Civil Engineer on base, the Eastern Space and Missile Command, and the 6550th Air Base Group. Finally, the Corps is represented by both Mobile District Project Managers and field engineers at Cape Canaveral.

The Notice to Proceed for construction on the TOCC was acknowledged by W&J Construction on 9 February 1989. The first Partnering workshop was held on 27-28 February at Daytona Beach, Florida. Due to the enthusiasm and cooperation of all the participants, the meeting went well. W&J Construction, who was wary of the Partnering at first, became a believer, and enjoyed the cooperative attitude among all involved.

Because of the initial success of the Partnering workshop, a follow-up meeting was not scheduled, but on-site meetings between the contractor, the Air Force, and the Corps' field personnel were scheduled biweekly at the TOCC.

As construction progressed, minor difficulties arose that warranted a follow-up meeting. A meeting of the entire Partnering group was held on 5 December 1989, ten months after the initial workshop. A survey of the contractor, the Air Force, and the Corps by the facilitator for the group, Dr. Don Mosley, indicated that those affected feel the Partnering process is working above average (4 on a scale of 1 to 5). The lowest score recorded was in problem handling, most feeling that the response time in dealing with problems and concerns was slow. Improvement is needed in communications which appears to be strained and restricted. This is an area that the group will work to improve. As one surveyed said "our candid, honest discussions are better said and resolved now than in the courts."

On the positive side, the highest scores were recorded in cooperation between both the Corps and the contractor and the Corps and the Air Force. Comments from those involved showed that the project is going better than without Partnering. The project is 63% complete and is running 20% ahead of schedule and so far only one accident has been recorded. Another of those surveyed said "...the Partnering concepts have definitely contributed to safety, quality, and ahead of schedule on this project."

One of the real success stories of this Partnership has been an attitude reversal by W&J Construction. Going into the process, they had a negative attitude towards the Corps' Value Engineering (VE) program. Based on their past experiences with the Corps of Engineers, they felt that the VE process was a waste of time. However, the cooperative attitude exhibited through the Partnership has totally changed their attitude. To date, they have submitted 73 VE proposals for a total savings of \$376,009. Six have been accepted for a total savings of \$106,763, and 2 are currently pending.

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